

### **ABSTRACT OF THE DISCLOSURE**

Various systems, methods, and programs embodied in a computer readable medium are provided for determining a worst-case impedance and worst-case voltage of a power supply loop coupled to a power input of a die. In various embodiments, the worst-case impedance of a power supply loop is determined and a reference voltage at the power input of the die associated with an average current generated at a power supply included in the power supply loop. A maximum change in a current at the power input of the die is also measured and an estimate of a worst-case voltage at the power input of the die is calculated based upon the worst-case impedance, the reference voltage, and the maximum change in the current.